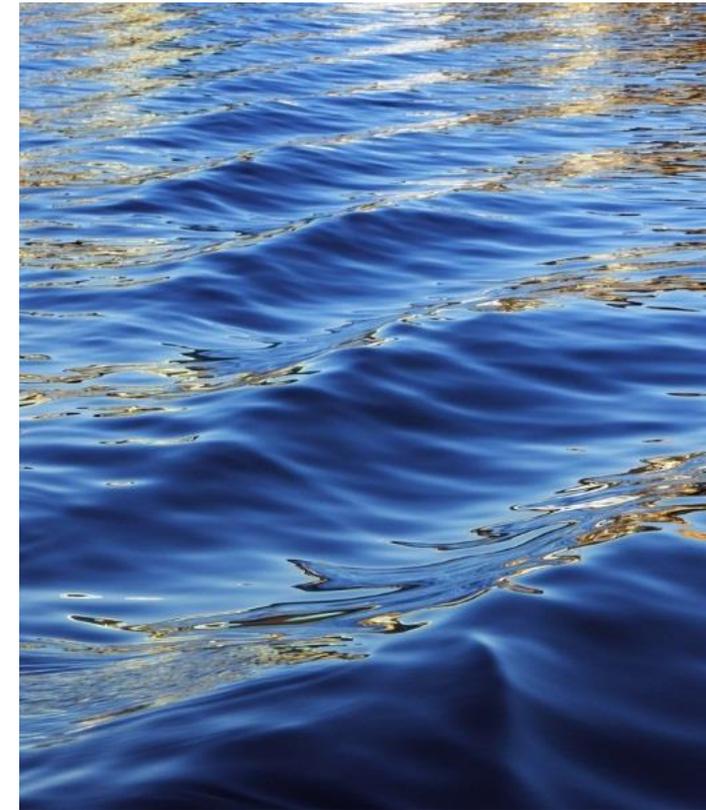


# Kansas Water: Partnering to Protect a Critical Resource

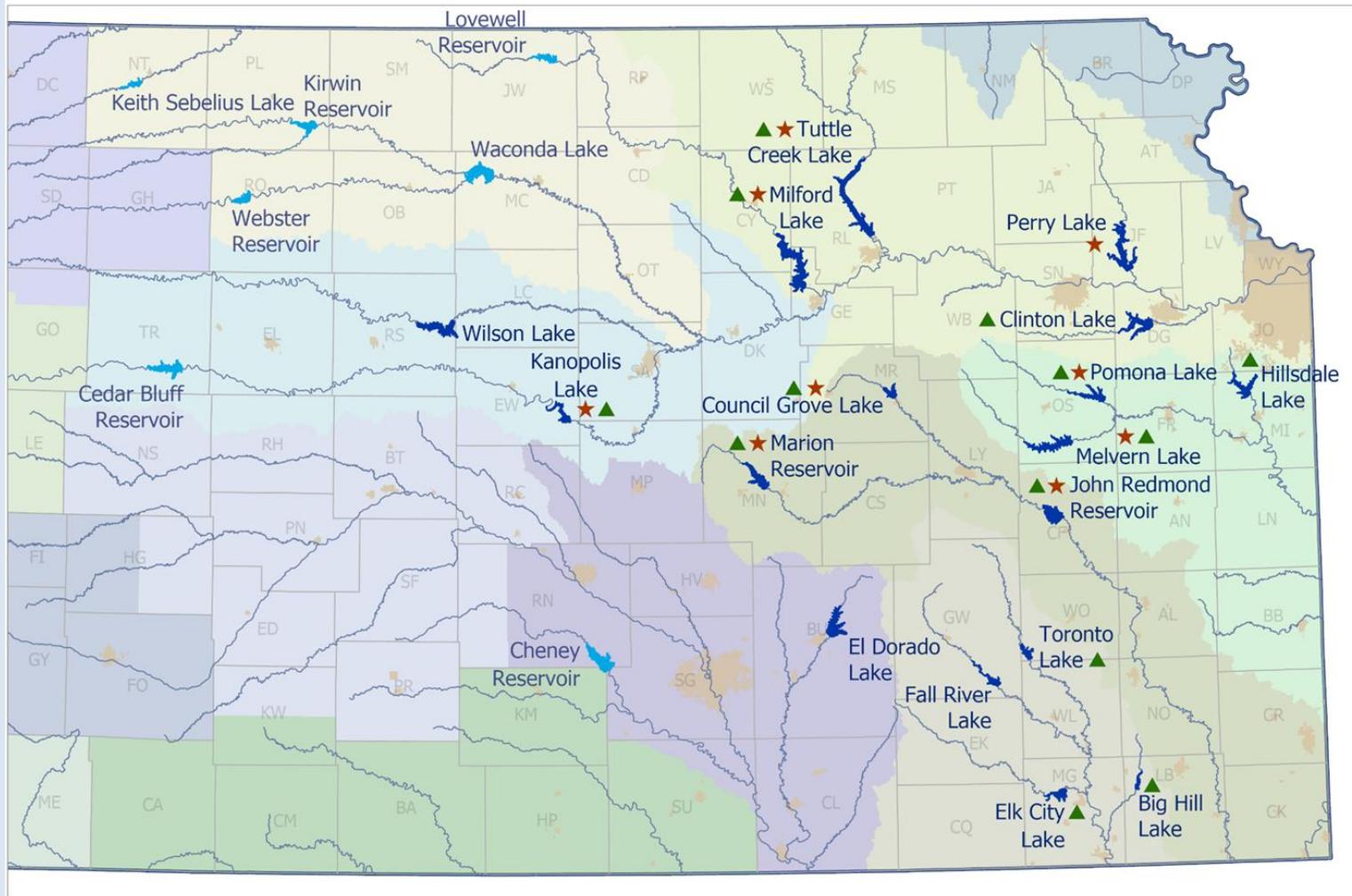
Kansas Water Office  
Kansas Department of Health & Environment  
Kansas Department of Agriculture

December 11, 2020



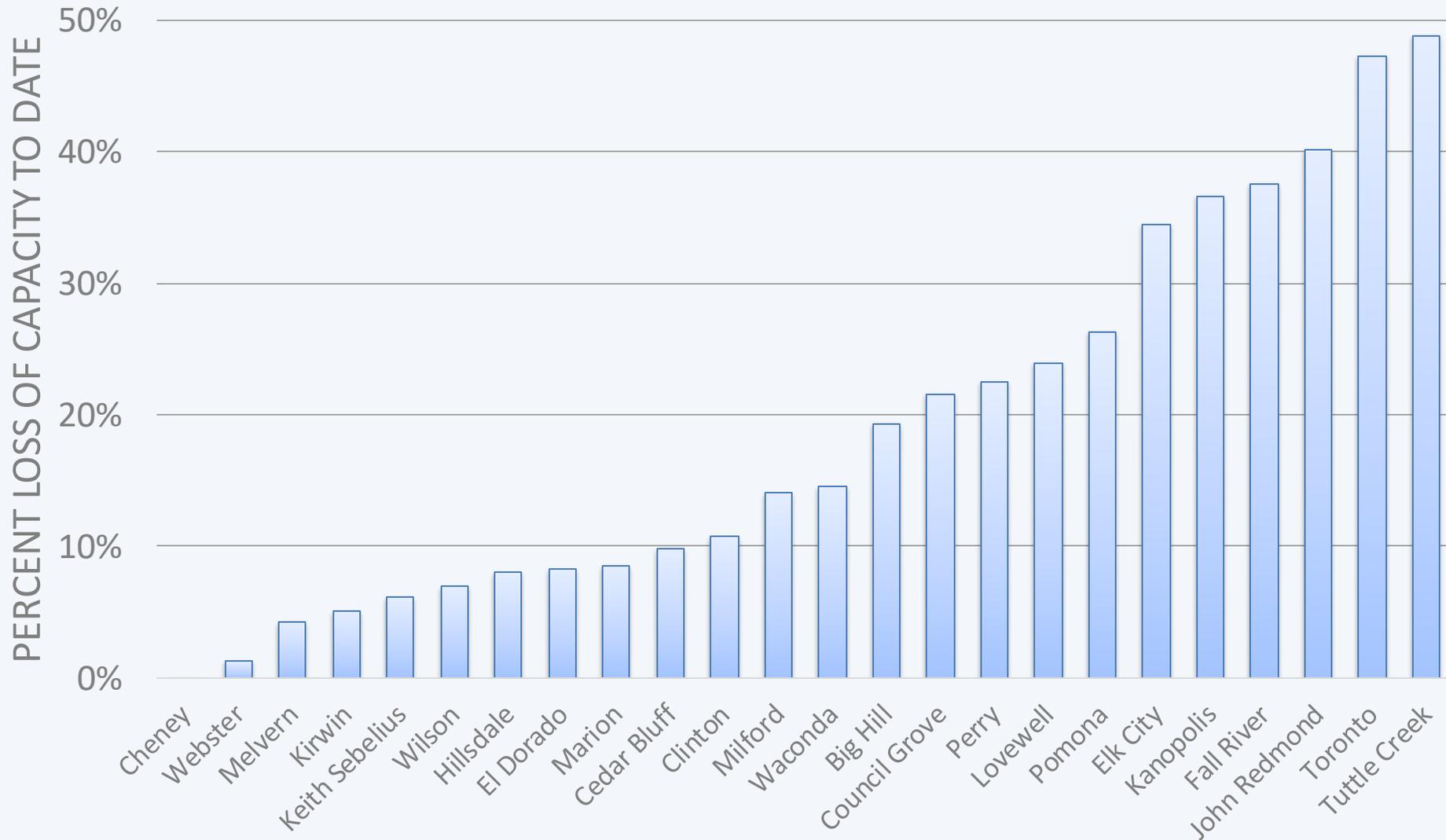
AD ASTRA PER ASPERA

# Federal Reservoirs in Kansas



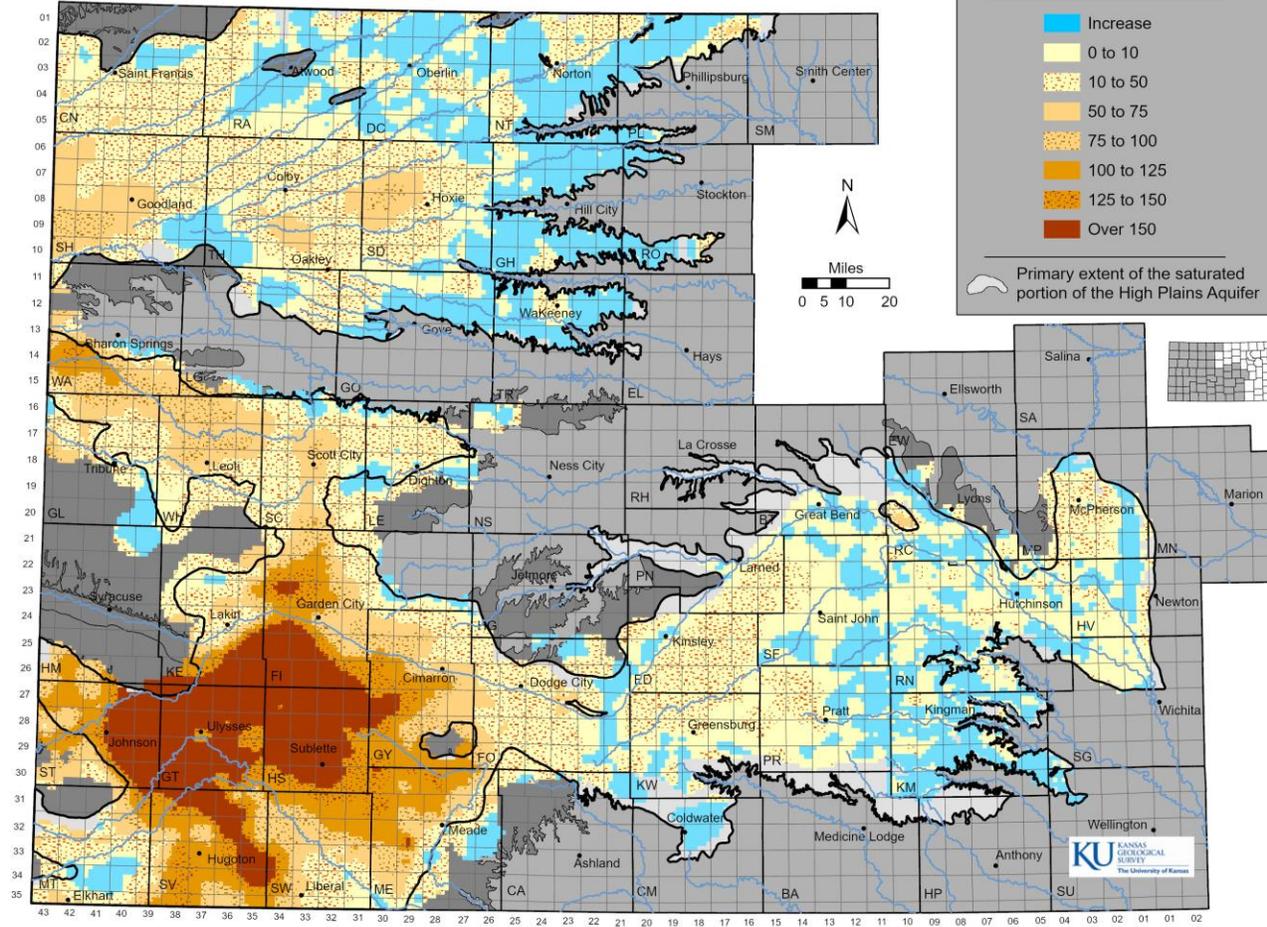
■ Cities   ★ Assurance / Access District   ▲ Marketing   ■ U.S. Bureau of Reclamation   ■ U.S. Army Corps of Engineers

# Reservoir Sedimentation Capacity Loss



# High Plains Aquifer Water Level Change

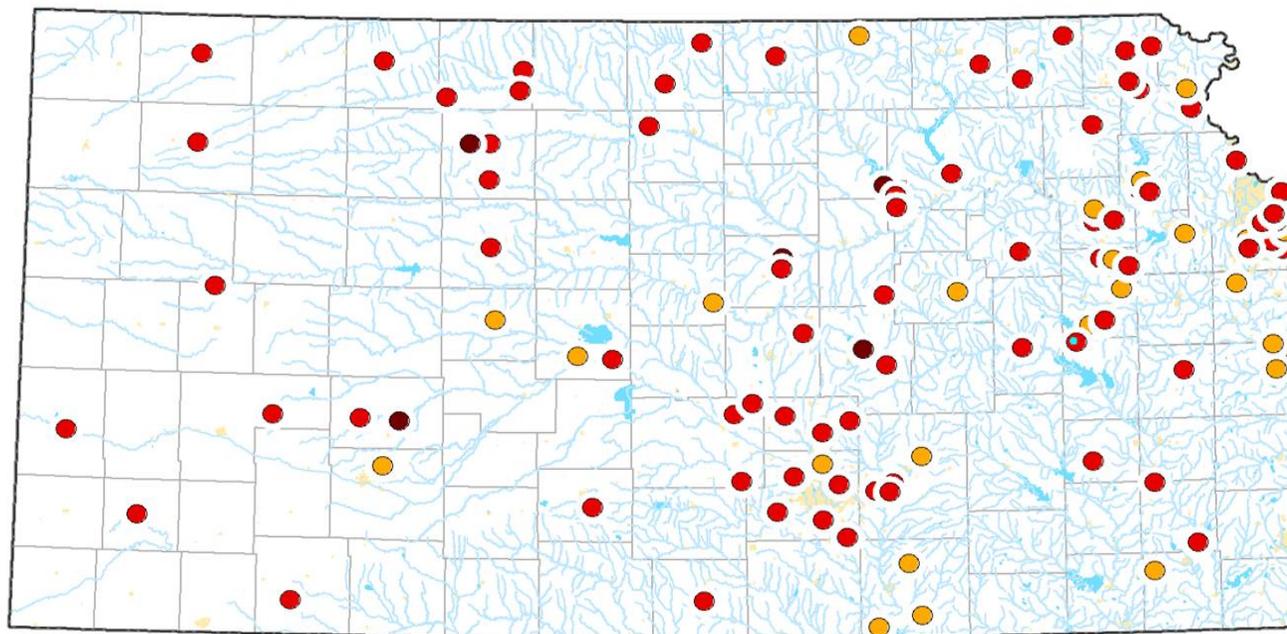
Change in Saturated Thickness, Predevelopment to Average 2018-2020,  
Kansas High Plains Aquifer



Source: Kansas Geological Survey

# Water Quality Concerns

Kansas Water Bodies with HAB Advisories, 2010-2020

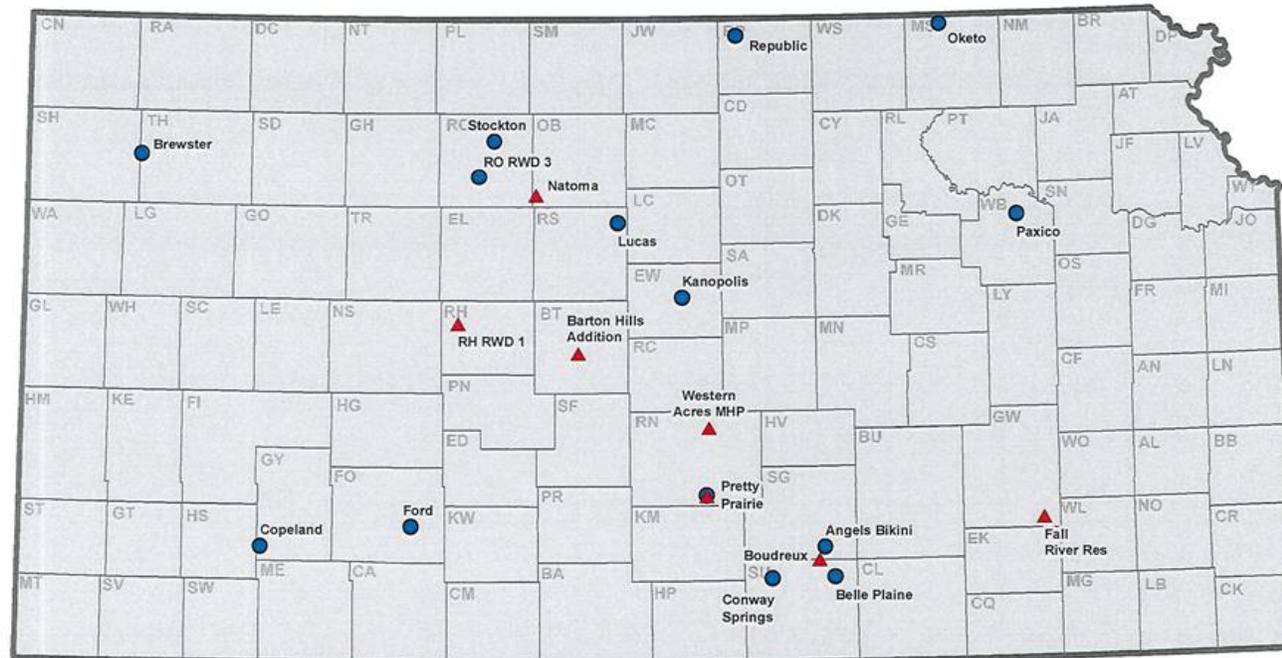


**MOST SEVERE ADVISORY**

- WATCH
- WARNING
- CLOSURE/HAZARD

# Water Quality Concerns

## Figure 12: Nitrate Violations



● MCL Violation ▲ Monitoring Violation

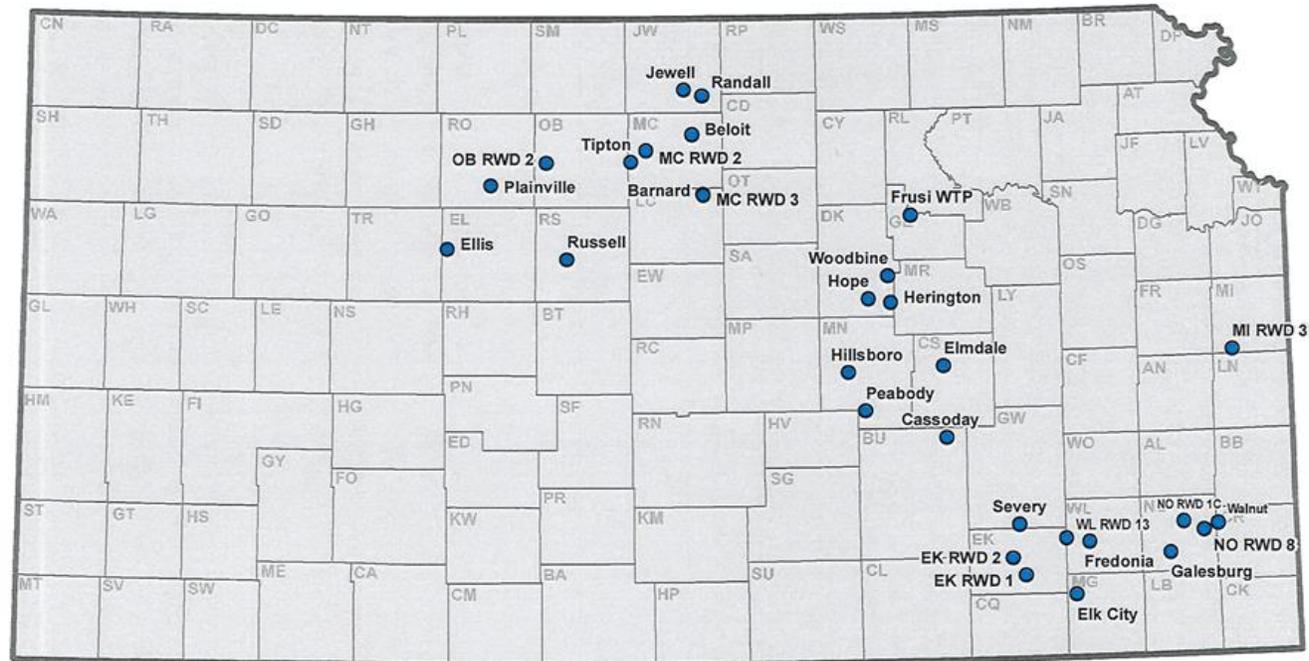


Data Source: KDHE, Bureau of Water, Public Water Supply  
Date Published: July 1, 2020



# Water Quality Concerns

Figure 17a: TTHM MCL Violations



● MCL Violation

Data Source: KDHE, Bureau of Water, Public Water Supply  
Date Published: July 1, 2020



# Agency Collaboration



# Kansas Water Office

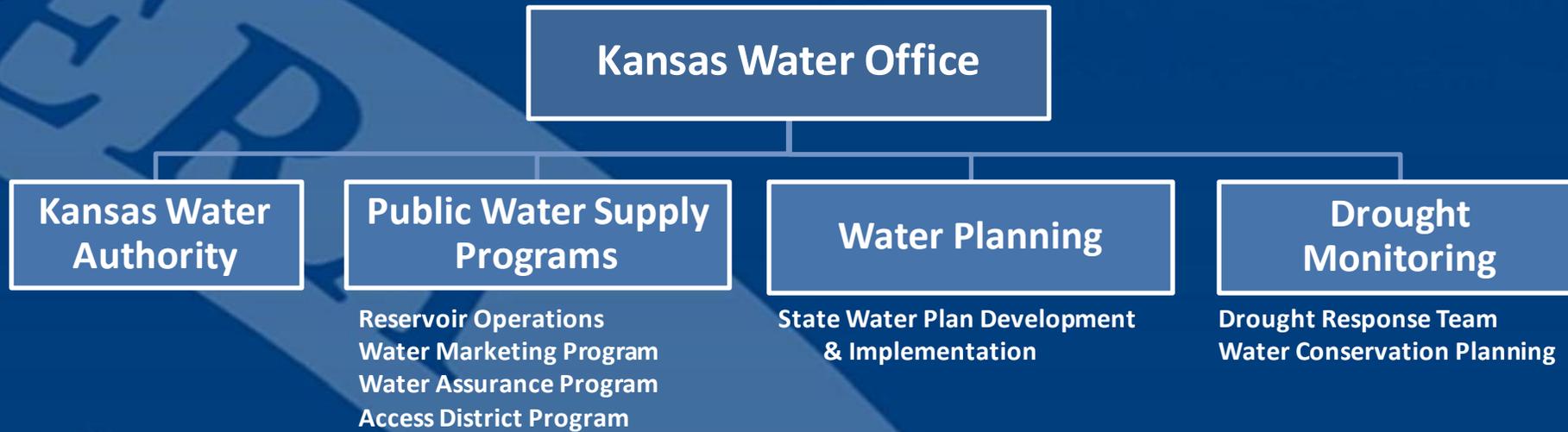
- Established in 1981 as the water planning, policy, coordination and marketing agency for the state.
- Coordinates with the Kansas Water Authority (KWA) on review of water laws and makes recommendations to Governor and Legislature for needed legislation to ensure water policies and programs address the needs of all Kansans.
- Primary statutory function is development and implementation of the Kansas Water Plan (K.S.A. 82a-903)

## Kansas Statutes

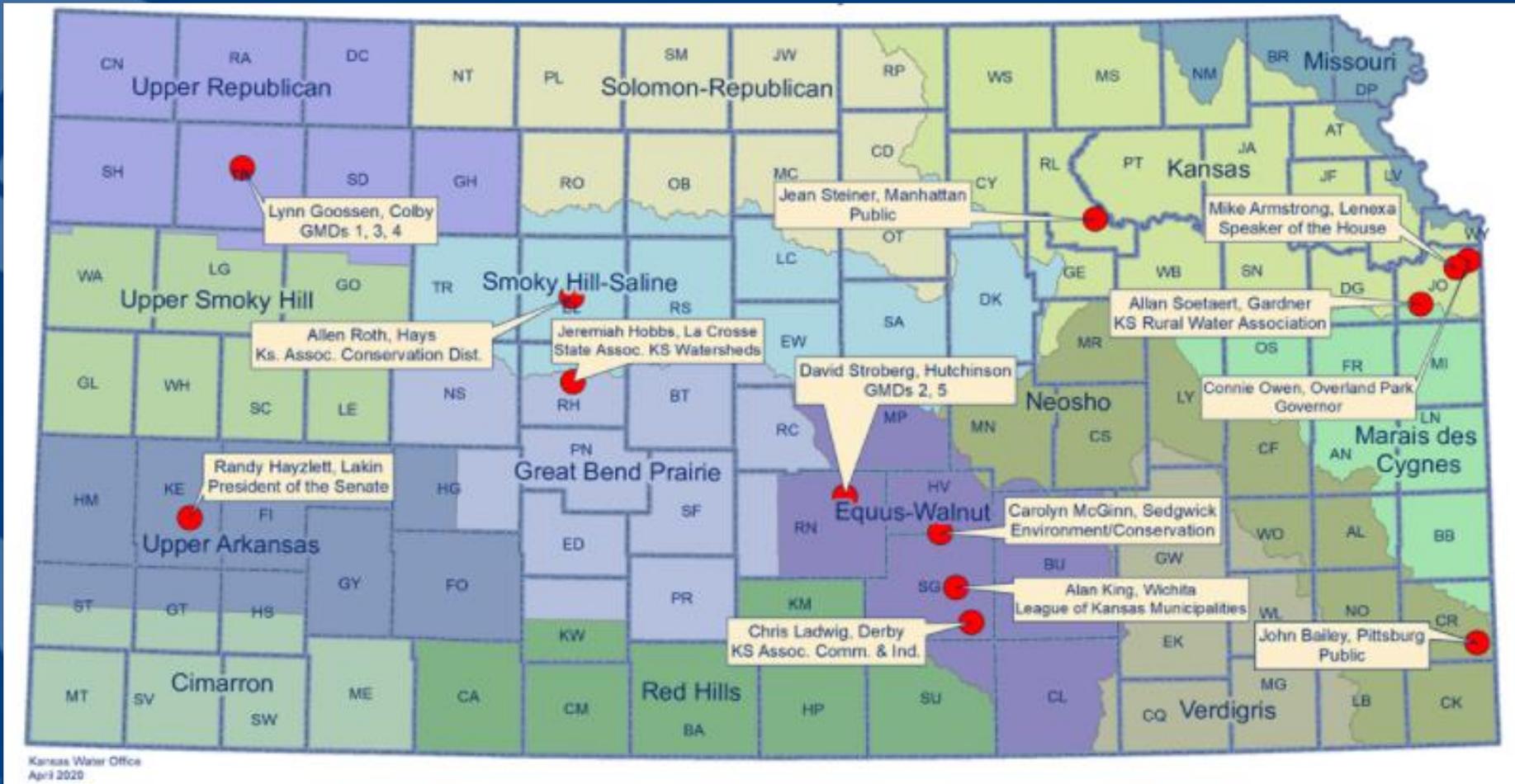
74-2613 Kansas Water Office established  
**74-2608 Water Policy Development, Water Planning, and Agency Coordination**  
74-2622 Kansas Water Authority established  
82a-220 Grant of streambank easement for navigable waters  
82a-733 Water conservation plans  
**82a-901 et seq. State Water Resources Planning Act**  
82a-1101 et seq. Coordination of streambank projects  
82a-1301 et seq. State Water Plan Storage Act  
82a-1330 et seq. Water Assurance Program Act  
82a-1401 et seq. Weather Modification Act  
82a-1501a Water Transfer Act  
82a-1604 et seq. Multipurpose Small Lakes Act  
8sa-1801 et seq. Water Litigation Act and fund  
82a-2101 Clean Drinking Water Fee  
82a-2301 et seq. Lower Smoky Hill Supply Access Program  
82a-2401 et seq. Reservoir Improvement District Act



# Agency Overview



# Kansas Water Authority (KWA)



The Kansas Water Authority consists of 13 voting members who are appointed by the Governor or Legislative Leadership. State agency directors serve as ex-officio members.



# Public Water Supply Programs



- Water Marketing Program**
  - Long term contracts with M&I customers
- Water Assurance Program**
  - 3 Districts formed by M&I water right holders
- Access District Program**
  - Voluntary, includes Irr & Rec, M&I

■ Cities    ★ Assurance / Access District    ▲ Marketing    ■ U.S. Bureau of Reclamation    ■ U.S. Army Corps of Engineers

January 2020  
Kansas Water Office



# Public Water Supply Programs



## Public Water Supply Program Comprehensive Capital Development Plan 2017



Approved by the Kansas Water Authority  
May 18, 2017

900 SW Jackson Street, Topeka, KS 66612 - (785) 296-3185 - [www.kwo.org](http://www.kwo.org)



# Water Planning

## State Water Plan Development & Implementation

- Address state's current water resource issues and plan for future needs
  - Groundwater declines
  - Reservoir sedimentation
  - Water quality issues
- Public Input and Stakeholder Involvement
  - Regional Advisory Committees (RACs)

## State Water Plan Fund

- Coordinate with KWA, RACs and agency partners to develop annual SWPF budget recommendations to implement State Water Plan



# Water Planning (Cont.)

## Assessment and Evaluation

- Assess water resource conditions statewide and regionally
- Targeted to implement priority water projects through technical assessment

## Technical Assistance to Water Users

- TA to municipalities through KRWA

## Streamgaging Program

- Cooperative agreement with USGS
- Development and maintenance of water resource assessment, reservoir operations, marketing and assurance programs, MDS protection and drought monitoring

## GIS Database Development

- Comprehensive GIS Database coverage across the state

## Reservoir Surveys & Research

- KWO Bathymetry Program
- Research Coordination Group

## Sediment Management

- Streambank Stabilization Interagency Team
- Reservoir sediment management (dredging/WID)



# Water Planning (Cont.)

## Watershed Conservation Practice Implementation Programs

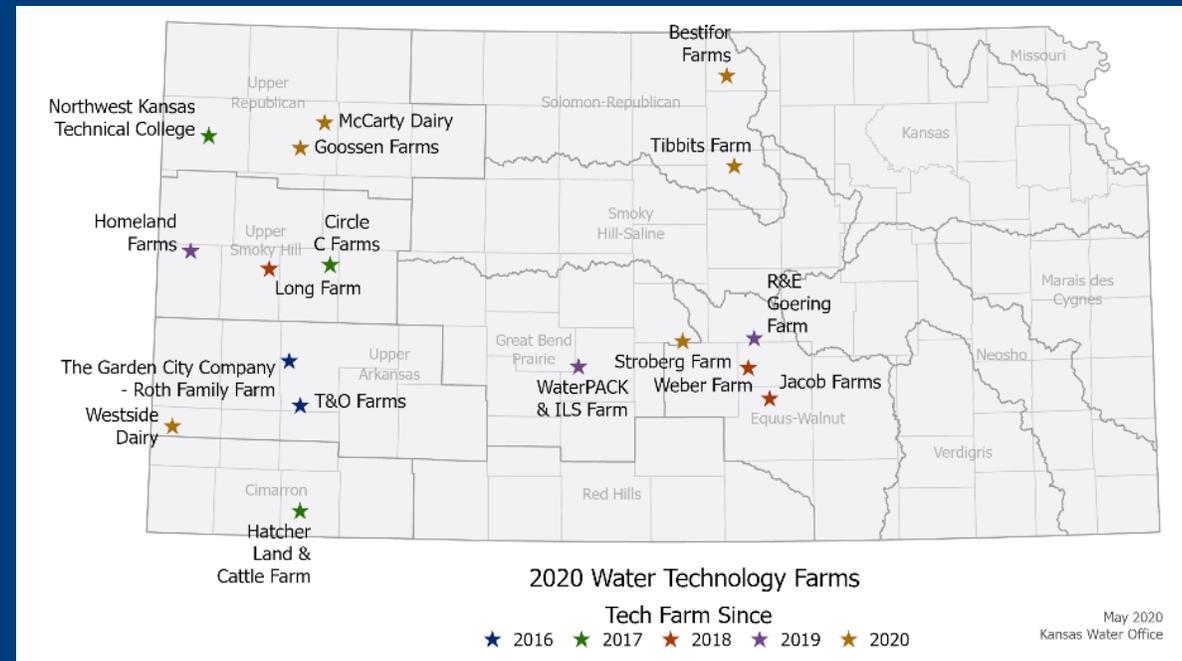
- Coordination with partner agencies to facilitate cost-share to landowners for implementation of targeted watershed conservation practices to reduce sediment and nutrients
- Kansas Reservoir Protection Initiative (KRPI), Milford Lake Regional Conservation Partnership Program (RCPP)

## Republican River Water Conservation Project (NE & CO)

- Identification of projects for implementation with funds from Nebraska and Colorado moneys within the Republican River basin

## Water Technology Farms

- Public-private partnerships demonstrating irrigation technology, conducting field-scale research and supporting water conservation efforts



# Education & Outreach



<https://kansasrunsonwater.org/>



# Drought Monitoring

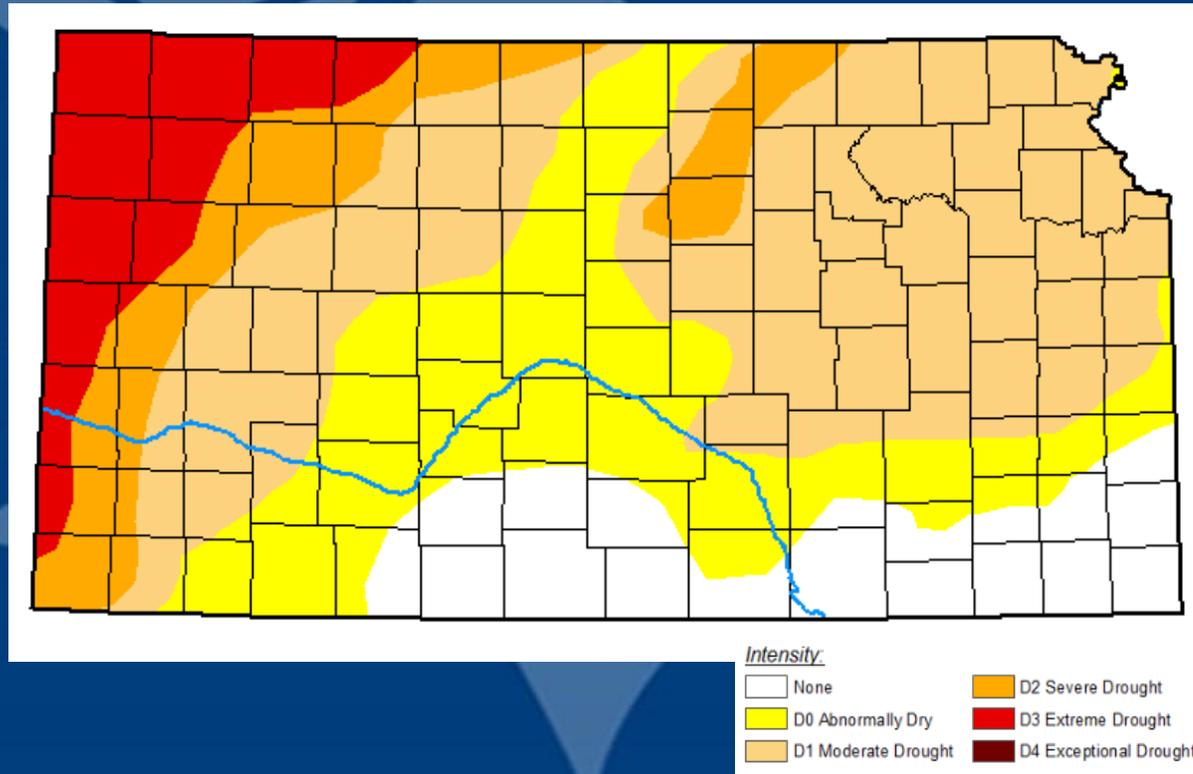
## Governor's Drought Response Team

- KWO is responsible for coordination of Governor's Drought Response Team, monitoring drought conditions and notifying the Governor when drought conditions exist within the state.

## Water Conservation Planning

- Guidelines and templates for municipal water conservation plans and drought response plans

U.S. Drought Monitor – Kansas  
December 8, 2020





## For More Information:

Website: [www.kwo.ks.gov](http://www.kwo.ks.gov)

Phone: 785-296-3185

Email: [kwo-info@kwo.ks.gov](mailto:kwo-info@kwo.ks.gov)

Cara Hendricks, P.E.  
Acting Director  
Kansas Water Office

[Cara.Hendricks@kwo.ks.gov](mailto:Cara.Hendricks@kwo.ks.gov)





# Kansas Legislature – Water Presentation

Kansas Department of Health & Environment | December 2020

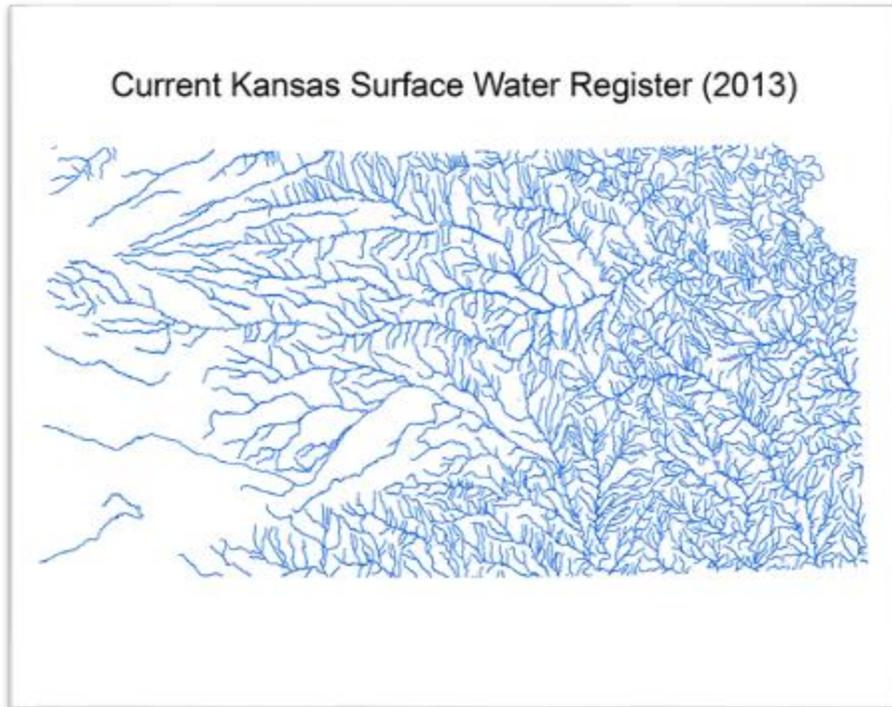
# Division of Environment

## Water Programs - Federal Rules

- Clean Water Act
- Safe Drinking Water Act
- State Revolving Loan Programs
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, aka Superfund Law)
- Resource Conservation and Recovery Act (RCRA)
- Surface Mining Control and Reclamation Act (SMCRA)

# Division of Environment

## Clean Water Act - Authority delegated to Kansas to administer the programs, subject to oversight by EPA over Standards, Total Maximum Daily Loads (TMDL) and Permitting, Compliance and Enforcement)



Source - KDHE

### Surface Water Quality Standards:

Fishable, swimmable, drinkable goals of Act (designated uses).

Establishes criteria to judge water quality in supporting uses.

### TMDL – Total Maximum Daily Loads:

Every two years, monitor and assess water quality condition of Kansas streams and lakes.

Those not meeting standards are considered impaired (303D List).

Establish a TMDL to reduce loads to fully support water quality.

Point sources reductions implemented through permitting.

Non-Point Source reductions implemented with best management practices.

### Permitting – NPDES [National Pollutant Discharge Elimination System]:

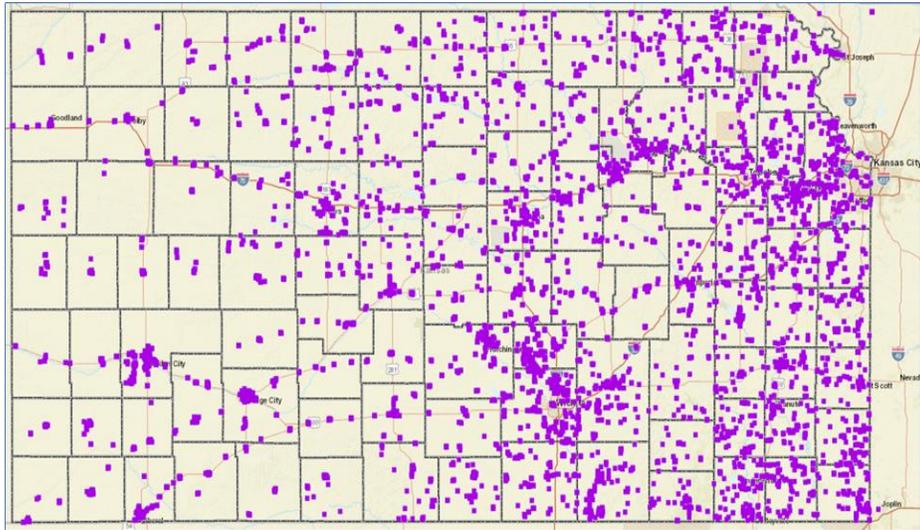
Permits discharge of wastewater or stormwater from municipalities and industries.

Reissued every five years.

Requires monitoring and reporting to check compliance.

# Division of Environment

## Safe Drinking Water Act (Authority delegated to Kansas to administer the programs, subject to oversight by EPA on Public Water Supply (PWS) Compliance and Enforcement)

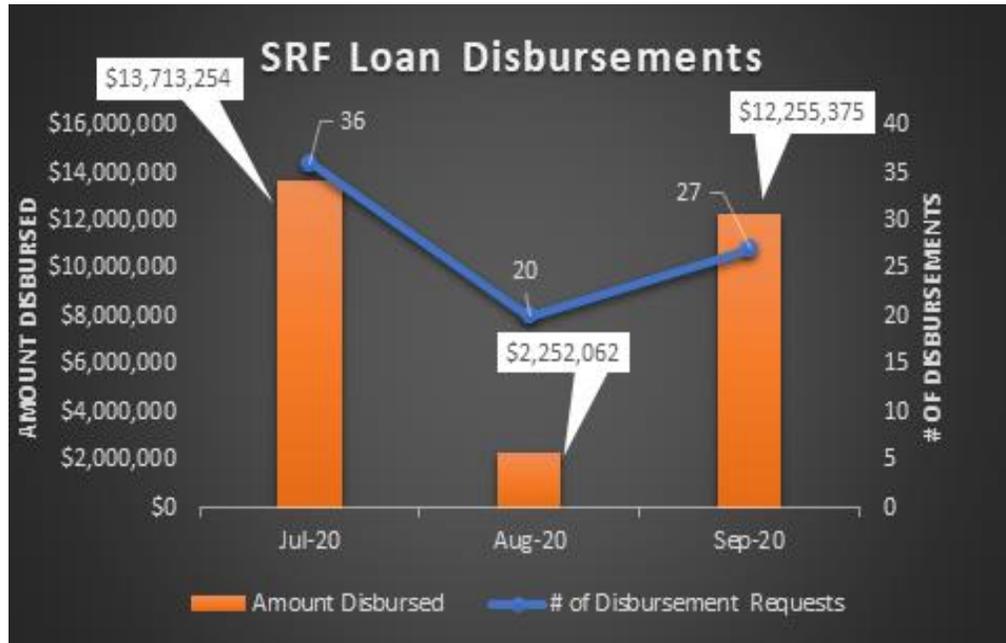


Source - KDHE

- 979 Public Water Supply systems in Kansas (including 867 communities serving 99% of Kansas population)
- Any establishment that supplies drinking water to 25 or more people at least 60 days per year is a PWS system
- 91% of PWS systems complied with health-based standards in 2019
- Underground Injection Control (protection of drinking water aquifers)
  - Class I Wells inject wastewater into deep geologic formations for disposal.
  - Class III Wells inject to dissolve and extract salt in Kansas.
  - Class V wells inject non-hazardous fluids underground (large septic fields, Wichita ASR, remediation projects).

# Division of Environment

## State Revolving Loan Program – Low Interest Loans to Municipalities for Drinking Water and Wastewater Projects



Source - KDHE

Use EPA Capitalization Grants and leveraged revenue bond proceeds to make loans to municipalities for planning and projects

Drinking Water SRF – loans for 30 years (40 years for disadvantaged communities)

- Water treatment plants and distribution systems
- \$895M in 345 loans

Wastewater SRF – loans for 20 years

- Wastewater treatment plants and collection systems
- Stormwater infrastructure, and collection systems
- \$1.4B in 510 loans

# Division of Environment

**Contaminated Site Cleanup - Authorities are used to protect human health; and improve water quality in the state. KDHE provides oversight to ensure cleanup of contaminated soil, water and sediments.**

- Two federal authorities:
  1. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, aka Superfund Law), and
  2. Resource Conservation and Recovery Act (RCRA).
- KDHE has two delegated authorities for RCRA.
  1. RCRA Corrective Action, and
  2. Storage Tanks Program
- KDHE has a Memorandum of Agreement (MOA) to address contaminated sites not on the National Priority List (Superfund). The MOA defers cleanup oversight decision-making to KDHE.



Source - KDHE

# Division of Environment

Several state cleanup programs work directly under the federal laws, whereas other programs are supplemented by various state statutes and regulations that are consistent with the federal laws.

## Superfund and Surface Mining:

Federal funds are used to clean up contaminated sites and high-risk surface water impoundments (e.g. coal mine pits).

- EPA funds superfund sites on the National Priority List.
- Office of Surface Mining assists with coal mine and lead mining reclamation under the Surface Mining Control and Reclamation Act.



*Photo Source - KDHE*

# Division of Environment

## State Lead Cleanup Programs:

- Dry Cleaner and Orphan Sites address contaminated soil, sediment, surface water and groundwater with state statutes consistent with CERCLA authorities.
- Leaking Underground Storage Tank (LUST) is consistent with federal RCRA law and state supplemental statutes. The Storage Tank Program is authorized by EPA.



Source - KDHE

## Potentially Responsible Person (PRP)-lead :

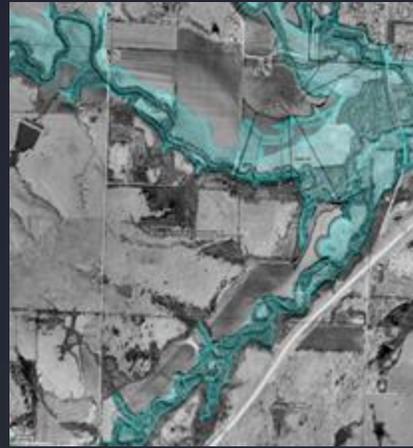
Address similar type of sites as state-lead programs; but are funded by the polluter or voluntary parties.

- State Cooperative and Voluntary Cleanup Parties (PRP-lead sites) fund the site assessment and cleanup activities.
- Federal Facility sites are primarily at Department of Defense facilities that are completed through the Defense/State Memorandum of Agreement with the Corp of Engineers.

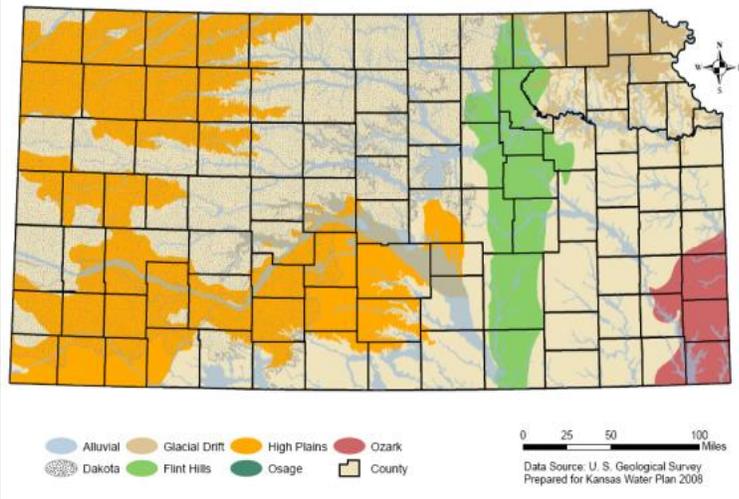
# Division of Environment

## Redevelopment Programs:

- Brownfields performs assessments and limited cleanup needed prior to redevelopment actions.
- Environmental Use Controls are formalized agreements attached to property allowing risk-based decision making to protect against future human exposure to residual contamination.
- Certificate of Environment Liability Release allows a release from the state for innocent developers who are not the cause of contamination on property.
- Tanks program provides reimbursement incentives to remove historical underground storage tanks at orphan sites and replacement of old single wall tanks with more protective double wall systems.



Major Kansas Aquifers



**Kansas Department of Agriculture  
Division of Water Resources**



# KDA – Division of Conservation

- The Division of Conservation (DOC), works to improve water quality, reduce soil erosion, conserve water, reduce flood potential and provide local water supply.



- **Kansas Statutes**

- Conservation District Act, 1937
    - 105 Conservation districts
    - State Conservation Commission

- Watershed District Act, 1953
    - 75 Watershed Districts

- The Kansas Agricultural Liming Materials Act, 1976

- Multipurpose Small Lakes Act, 1985

- Surface-Mining Land Conservation and Reclamation Act, 1994

- **Funding from**

- State Water Plan Fund
  - State General Fund
  - Fee funds



# KDA – Division of Conservation

## ➤ State Water Plan Funded Programs

- Aid to Conservation Districts
- Water Resources Cost Share
- Nonpoint Source Pollution Assistance
- WTAP/CREP
- Watershed Dam Construction
- Water Supply Restoration
- Streambank Stabilization
- Irrigation Technology Cost Share
- Water Quality Buffer Initiative
- Riparian and Wetland Program



# KDA – Division of Water Resources

- The KDA Division of Water Resources administers 30 laws and responsibilities including the Kansas Water Appropriation Act which governs how water is allocated and used; statutes regulating the construction of dams, levees and other changes to streams; the state's four interstate river compacts; as well as coordinating the national flood insurance program in Kansas.

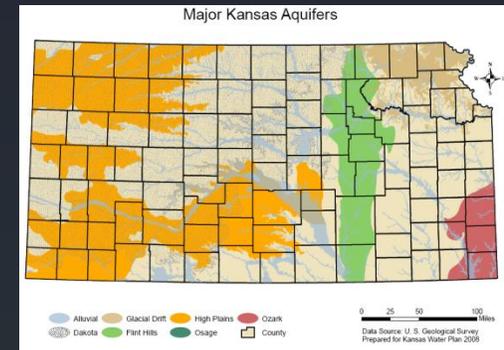
- **Kansas Statutes**

- Levee Law, 1929
  - Obstructions in Streams, 1929
  - Water Storage Law, 1941
  - Republican River Compact, 1943
  - Water Appropriation Act, 1945
  - Kansas-Colorado Arkansas River Compact, 1949
  - Watershed District Act, 1953
  - Kansas-Oklahoma Arkansas River Compact, 1966
  - Kansas-Nebraska Big Blue River Compact, 1971
  - Groundwater Management District Act, 1972
  - Water Plan Storage Act, 1974
  - Water Transfer Act, 1983
  - Water Assurance Program Act, 1986
  - Floodplain Zoning, 1991
  - Water Banking Act, 2001



# DWR Programs

- **Water Appropriation** - Manages the state's water supply through a system of permits, reviews and inspections.
- **Water Management Services** - Provides technical and data support and includes the following sub-programs:
  - **Interstate Water Issues** - Kansas is party to compacts that allocate water from the Arkansas, Big Blue, Missouri and Republican rivers.
  - **Basin Management Team** - Works to develop water management strategies to address water resource issues identified in the Kansas State Water Plan.
- **Water Structures** - Regulates dams, stream modifications, levees and floodplain fills for the protection of life, property and public safety; provides technical assistance to local communities participating in the National Flood Insurance Program



# Water Appropriation

*Control water use, protect water rights,  
prepare for shortages, promote conservation*

## Kansas Statutes

- Water Appropriation Act, 1945
- Groundwater Management District Act, 1972
- Water Plan Storage Act, 1974
- Water Transfer Act, 1983
- Water Assurance Program Act, 1986
- Water Banking Act, 2001



# Kansas Water Appropriation Act

- Since 1945 – Right to use water based on prior appropriation or "First in time – First in right"
  - All water is dedicated to the use of the people of Kansas
  - Limits rights to reasonable needs
  - Allows a limited resource to be allocated for beneficial use and to protect minimum desirable stream flows
  - Protects investments, property rights and the resource
  - A water right does not grant ownership of water. It is a real property right to divert and use water for beneficial purposes with reasonable limitations



# Beneficial Uses of Water



Stockwatering



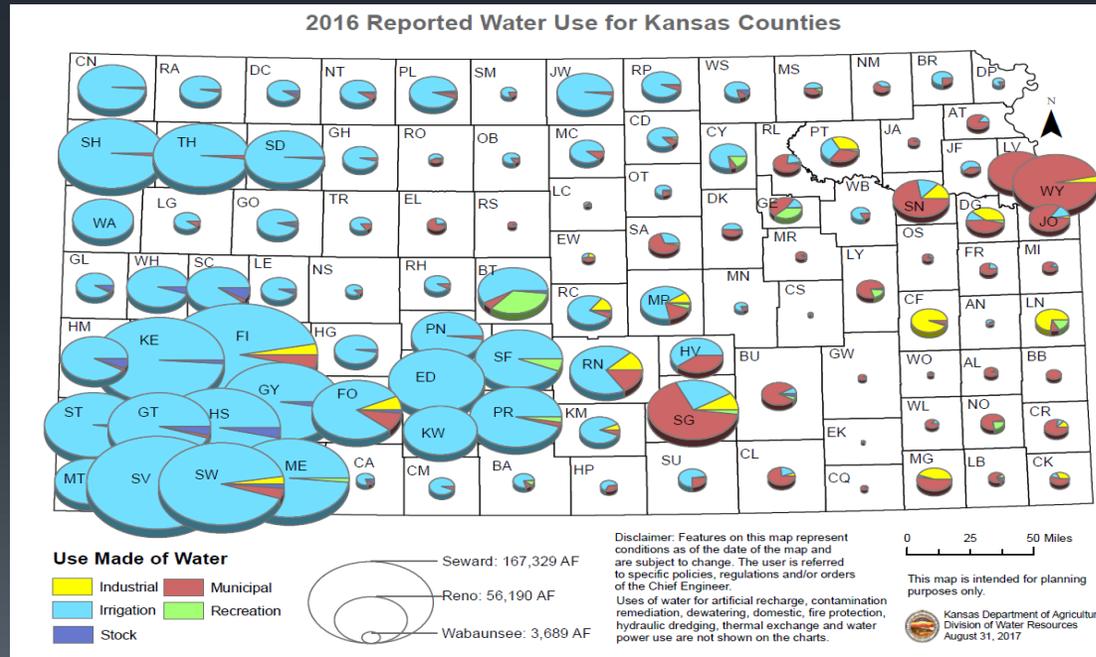
Industrial



Recreational



Irrigation

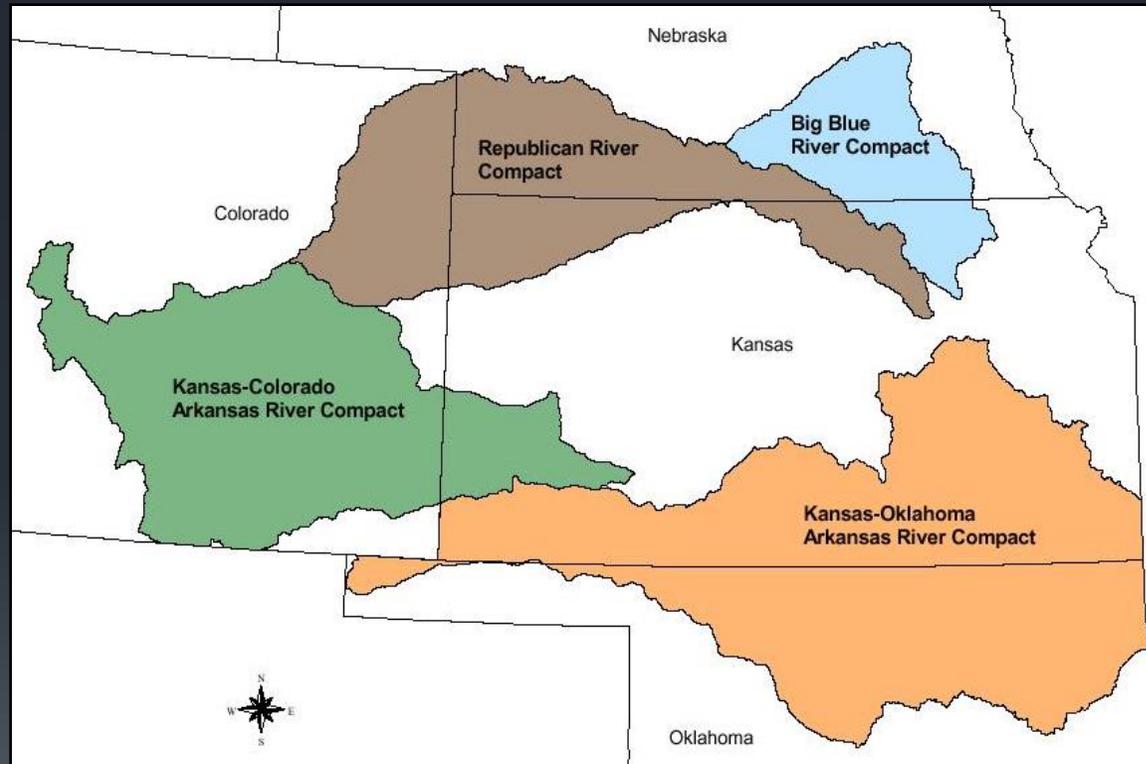


Others:

- Municipal
- Domestic
- Dewatering
- Hydraulic Dredging
- Thermal Exchange

# Water Management Services

*Agreements with neighboring states on quantity and quality of streamflow crossing state lines*



# Water Structures

*Prevent/reduce loss of life and property damage due to manmade changes in streams and floodplains*

## ➤ Levee Law, 1929

- levee or other such improvement along any stream

## ➤ Obstruction in Streams, 1929

- **dam** or other **water obstruction**, or
- **change** the course, current, or cross section of any stream

## ➤ Watershed District Act, 1953

- establish watershed districts

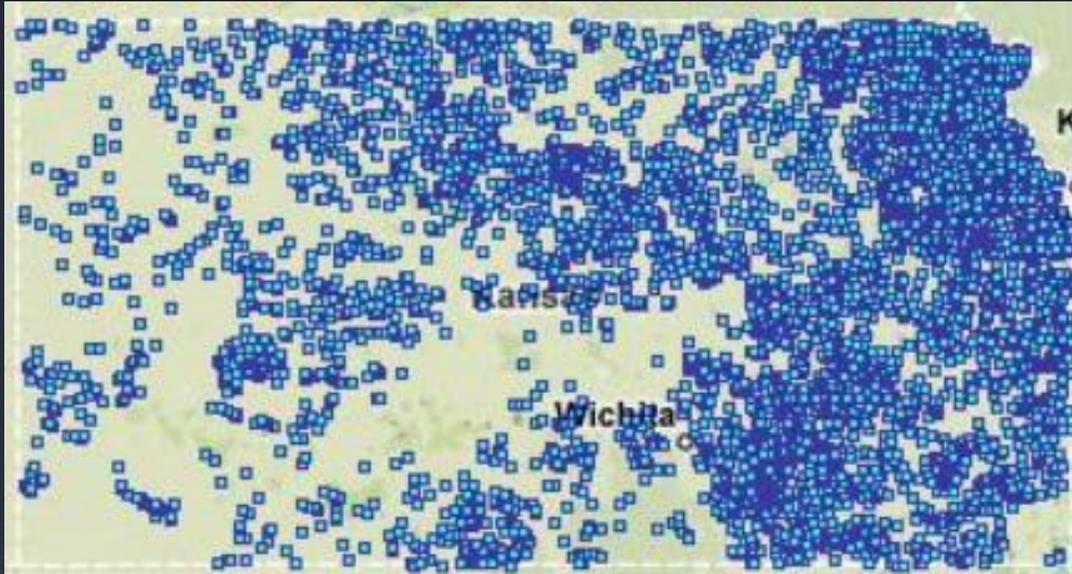
## ➤ Floodplain Zoning, 1991

- create or effect change in a flood plain zone



# Dam Safety

- 6154 dams in the state of Kansas (2<sup>nd</sup> most in country)



- 6,154 NID dams
  - Updated June 2018
- 2,517 State regulated dams
- 258 High hazard dams
- 170 Significant hazard dams



## NFIP Participation in Kansas

- 455 communities participate
  - 428 Regular Phase
  - 27 Emergency Phase
- 82 communities not in the flood program
- 10,904 flood insurance policies in force
- \$ 1.97 billion in property coverage
- \$ 8,829,778 in annual premiums
- \$ 87,978,711 in claims paid since 1978



## For More Information

[agriculture.ks.gov](http://agriculture.ks.gov)

> Divisions and Programs

> Division of Water Resources

Earl Lewis, P.E.  
Chief Engineer  
KDA, Division of Water Resources

[Earl.Lewis@ks.gov](mailto:Earl.Lewis@ks.gov)



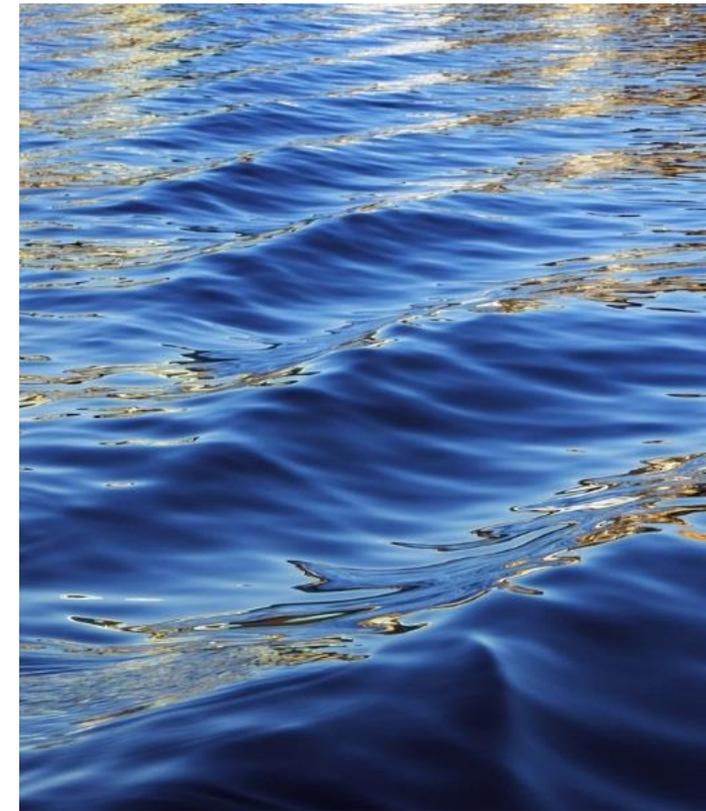


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**Kansas Water Office**  
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**Kansas Department of Agriculture**  
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